

SB717, SD2

Hearing 04/08/15

---

# A BILL FOR AN ACT

RELATING TO ETHANOL.

**BE IT ENACTED BY THE LEGISLATURE OF THE STATE OF HAWAII:**

1       SECTION 1. The legislature finds that in some states the  
2 mandated use of renewable fuels has created some economic  
3 benefit because those states are able to produce or cheaply  
4 import renewable fuels. However, despite dozens of biomass,  
5 biodiesel, and ethanol facilities that have been proposed for  
6 Hawaii, no ethanol plants currently exist in the State. Since  
7 2006, Hawaii has required that gasoline sold in the State  
8 include ten per cent ethanol. This requirement of blending  
9 ethanol into Hawaii's gasoline does not produce any economic  
10 benefit for the State; further, the import of ethanol creates an  
11 economic burden for state residents.

12       The purpose of this Act is to repeal the requirement that  
13 gasoline for motor vehicles sold in the State include ten per  
14 cent ethanol.

15       SECTION 2. Section 486J-10, Hawaii Revised Statutes, is  
16 repealed.

17       ~~["§486J-10 Ethanol content requirement. (a) The director~~  
18 ~~shall adopt rules in accordance with chapter 91 to require that~~



1 ~~gasoline sold in the State for use in motor vehicles contain ten~~  
2 ~~per cent ethanol by volume. The amounts of gasoline sold in the~~  
3 ~~State containing ten per cent ethanol shall be in accordance~~  
4 ~~with rules as the director may deem appropriate. The director~~  
5 ~~may authorize the sale of gasoline that does not meet these~~  
6 ~~requirements as provided in subsection (d).~~

7 ~~(b) Gasoline blended with an ethanol based product, such~~  
8 ~~as ethyl tertiary butyl ether, shall be considered to be in~~  
9 ~~conformance with this section if the quantity of ethanol used in~~  
10 ~~the manufacture of the ethanol based product represents ten per~~  
11 ~~cent, by volume, of the finished motor fuel.~~

12 ~~(c) Ethanol used in the manufacture of ethanol based~~  
13 ~~gasoline additives, such as ethyl tertiary butyl ether, may be~~  
14 ~~considered to contribute to the distributor's conformance with~~  
15 ~~this section; provided that the total quantity of ethanol used~~  
16 ~~by the distributor is an amount equal to or greater than the~~  
17 ~~amount of ethanol required under this section.~~

18 ~~(d) The director may authorize the sale of gasoline that~~  
19 ~~does not meet the provisions of this section.~~



~~(1) To the extent that sufficient quantities of competitively priced ethanol are not available to meet the minimum requirements of this section; or~~

~~(2) In the event of any other circumstances for which the director determines compliance with this section would cause undue hardship.~~

~~(e) Each distributor, at reporting dates as the director may establish, shall file with the director, on forms prescribed, prepared, and furnished by the director, a certified statement showing:~~

~~(1) The price and amount of ethanol available;~~

~~(2) The amount of ethanol blended fuel sold by the distributor;~~

~~(3) The amount of non ethanol blended gasoline sold by the distributor; and~~

~~(4) Any other information the director shall require for the purposes of compliance with this section.~~

~~(f) Provisions with respect to confidentiality of information shall be the same as provided in section 486J-6.~~

~~(g) Any distributor or any other person violating the requirements of this section shall be subject to a fine of not~~





1 ~~less than \$2 per gallon of nonconforming fuel, up to a maximum~~  
2 ~~of \$10,000 per infraction.~~

3 ~~(h) The director, in accordance with chapter 91, shall~~  
4 ~~adopt rules for the administration and enforcement of this~~  
5 ~~section." ]~~

6 SECTION 3. Statutory material to be repealed is bracketed  
7 and stricken.

8 SECTION 4. This Act shall take effect on July 1, 2050.



**Report Title:**

Ethanol; Motor Vehicles; Gasoline

**Description:**

Repeals existing requirement that gasoline sold in the State for use in motor vehicles be composed of ten per cent ethanol.

Effective 07/01/2050. (SD2)

*The summary description of legislation appearing on this page is for informational purposes only and is not legislation or evidence of legislative intent.*





## DEPARTMENT OF BUSINESS, ECONOMIC DEVELOPMENT & TOURISM

DAVID Y. IGE  
GOVERNOR

LUIS P. SALAVERIA  
DIRECTOR

MARY ALICE EVANS  
DEPUTY DIRECTOR

No. 1 Capitol District Building, 250 South Hotel Street, 5th Floor, Honolulu, Hawaii 96813  
Mailing Address: P.O. Box 2359, Honolulu, Hawaii 96804  
Web site: [www.hawaii.gov/dbedt](http://www.hawaii.gov/dbedt)

Telephone: (808) 586-2355  
Fax: (808) 586-2377

Statement of  
**LUIS P. SALAVERIA**  
**Director**  
Department of Business, Economic Development, and Tourism  
before the  
**HOUSE COMMITTEE ON TRANSPORTATION**

Wednesday, April 8, 2015  
11:00 a.m.  
State Capitol, Conference Room 309

in consideration of  
**SB 717, SD2**  
**RELATING TO ETHANOL.**

Chair Aquino, Vice Chair LoPresti, and Members of the Committee.

The Department of Business, Economic Development & Tourism (DBEDT) offers comments on SB 717, SD2, which repeals the existing requirement that gasoline for motor vehicles be composed of 10 percent ethanol.

DBEDT acknowledges that ethanol has played a mixed role in Hawaii's renewable energy mix for transportation. While ethanol has reduced the consumption of petroleum products in the transportation sector, it has been imported as a blending stock and has not been produced locally despite the availability of production tax credits.

As Hawaii refiners face a more challenging future consistent with the findings of the 2014 Hawaii Refinery Task Force Final Report,<sup>1</sup> we suggest that the Legislature consider refiners' views on the potential prospect for future ethanol production and blending in Hawaii.

---

<sup>1</sup> See Hawaii Refinery Task Report, Final Report (April 9, 2014) at 38, available at [http://energy.hawaii.gov/wp-content/uploads/2011/08/HRTF\\_Final-Report\\_04-10-14.pdf](http://energy.hawaii.gov/wp-content/uploads/2011/08/HRTF_Final-Report_04-10-14.pdf)

Thank you for the opportunity to offer these comment\s regarding SB 717, SD 2.



SB 717 SD2 Relating to Ethanol  
House Committee on Transportation  
Wednesday April 8th, 2015  
Room 309 at 11:00 a.m.

Position: Opposed

Chair Aquino, Vice Chair LoPresti, and Members of the House Committee on Transportation,

We would like to highlight what we believe to be unintended consequences with S.B. 717 SD2. DuPont brings the perspective of a company deeply involved in the agricultural and biofuels industries. We are an industry leader in providing products for agricultural energy crops, feedstock processing, animal nutrition, and biofuels.

It is premature to pass a bill that could have significant impacts for Hawaii, and unintended consequences for the future, without gaining a better understanding of the implications. No ethanol plants currently exist in the State. If Hawaii is to attract new investments in ethanol and other advanced biofuels, positive and consistent policy support for biofuels is a pre-requisite.

This bill related to ethanol in fuels will send a negative ripple across the biofuels and energy crop sector throughout Hawaii, negatively impacting the economics of the renewable energy and biofuels sector of our economy. We have seen great reductions in sugarcane and pineapple production over the years. The one remaining sugarcane operation on Maui, HC&S, is struggling. As more productive agricultural land is available and we seek agricultural land use alternatives, we do not need legislation that could make it even more difficult for biofuels and energy crop projects to attract funding due to the bad precedence SB 717 S.D. 2 would set.

S.B. 717 S.D. 2 is also counter-productive. Even if S.B. 717 S.D.2 were successful in reducing the quantity of ethanol blended, the legislation would reduce consumer choice and force Hawaii families and businesses to bear higher costs. Ethanol is cheaper than gasoline, and provides additional fuel options.

Thank you for the opportunity to provide testimony in opposition to this ethanol bill.



SB 717 SD2 Relating to Ethanol  
Supplemental Testimony  
House Committee on Transportation  
Wednesday April 8th, 2015  
Room 309 at 11:00 a.m.

Position: Opposed

Chair Aquino, Vice Chair LoPresti and Members of the House Committee on Transportation,

DuPont wishes to highlight what we believe to be unintended consequences with S.B. 717 S.D.2. DuPont brings the perspective of a company deeply involved in the agricultural and biofuels industries. We are an industry leader in providing products for agricultural energy crops, feedstock processing, animal nutrition, and biofuels. Our three-part approach to biofuels includes: (1) improving existing ethanol production through differentiated agriculture seed products, crop protection chemicals, as well as enzymes and other processing aids; (2) developing and supplying new technologies to allow conversion of cellulose to ethanol; and (3) developing and supplying next generation biofuels with improved performance, such as biobutanol. Our view is that the legislation would harm, rather than help Hawaii consumers. Limiting ethanol and other biofuels in gasoline is impractical, prevents high quality and lower cost fuels from the marketplace, prevents consumer choice and ignores the environmental and national security benefits of biofuels.

DuPont has significant investments in advanced biofuels that will make transformative contributions to our nation's energy security, reduce greenhouse gas emissions and strengthen rural economies. One of DuPont's advanced renewable fuels is cellulosic ethanol. We have been developing our technology for a decade, and since 2009 we have operated a demonstration facility in eastern Tennessee producing ethanol from both corn stover and switchgrass. Our experience in Tennessee has made us very confident in our technology and engineering for a commercial-scale facility. In addition, we have worked closely with farmers, equipment makers and others for three years of large-scale corn stover harvest trials to demonstrate the ability to manage a cost-effective cellulose supply chain. This work has culminated in our construction of a 30-million gallon per year facility located in central Iowa that is scheduled to begin producing cellulosic ethanol from corn stover in 2015.

Corn stover capitalizes on existing infrastructure to provide rapid expansion in ethanol production from non-food feedstocks. Existing farm equipment will harvest an appropriate amount of stover, leaving behind enough for soil conditioning and erosion control. The stover will be transported to a cellulosic conversion unit co-located with an existing biorefinery where it will be processed and fermented. The result will be a 20-25% increase in ethanol production from existing acreage, providing expanded economic opportunity to growers and potential investors in advanced biofuel capacity. The stover from fields that are currently producing corn for food and feed uses will yield additional biofuels volumes, further expanding the ability of agriculture to produce food, feed and fuel.



**I. S.B. 717 S.D.2 harm rather than help Hawaii consumers.**

S.B. 717 S.D.2 is unnecessary and counter-productive. It is unnecessary because oil companies and refiners are obligated to blend ethanol and other biofuels pursuant to the federal Renewable Fuel Standard. As a result, removing the requirement that gasoline contain ten percent ethanol will have no effect on the actual quantity of ethanol blended.

S.B. 717S.D.2 is also counter-productive. Even if S.B. 717 S.D.2 were successful in reducing the quantity of ethanol blended, the legislation would reduce consumer choice and force Hawaii families and businesses to bear higher costs. Ethanol is cheaper than gasoline. Limiting fuel options could increase imports and raise the cost of gasoline in the state by 15 to 20 cents per gallon or more.

**II. S.B. 717 S.D.2 would make Hawaii and the U.S. more dependent on foreign oil.**

Less biofuel means more foreign oil and more American dollars sent overseas. That's good news for the Middle East. That's bad news for America. Ten of the 11 U.S. recessions since World War II have been preceded by significant oil price spikes. Ethanol has helped permanently reduce our reliance on imported oil. In 2013 alone, domestic ethanol displaced more than 460 million barrels of oil.<sup>1</sup> Continued reliance on oil regardless of its source burdens American families and our economy to the volatility of the global oil market and those who control it. For example, the 2014/15 fall in oil prices is not a permanent condition. It is credited by many to be a conscious decision by OPEC to squeeze oil producers, in the U.S. and others outside the Middle East, out of the global market. Industry-watchers speculate that the future in 2015 could rely on the actions of a single country – Saudi Arabia. This is not a solution for American consumers.

**III. Future growth in biofuels supply will come largely from non-food related feedstocks.**

Ethanol, and more so cellulosic ethanol, has a positive environmental benefit. Ethanol reduces tailpipe carbon monoxide emissions by as much as 30%, toxics content by 13% (mass) and 21% (potency), and tailpipe fine particulate matter (PM) emissions by 50%, leading to better air quality.<sup>2</sup> Cellulosic ethanol regardless of the feedstock must meet a minimum 60% reduction in greenhouse gas emissions. Based on a life cycle analysis, DuPont's corn stover cellulosic ethanol meets a greater than 70% reduction in greenhouse gas emissions. Excluding this fuel from the transportation supply significantly reduces the greenhouse gas benefits.

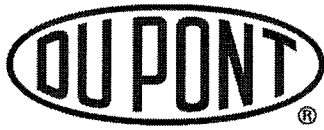
**IV. Blending ethanol into the fuel supply does not drive up food and feed prices.**

One-third of every bushel of grain processed into ethanol is enhanced and returned to the animal feed market in the form of distillers grains, corn gluten feed or corn gluten meal. The

---

<sup>1</sup> <http://www.ethanolrfa.org/pages/ethanol-facts-energy-security>

<sup>2</sup> <http://www.ethanolrfa.org/pages/ethanol-facts-environment>



price of crude oil continues to be the largest factor affecting grain prices. In fact grain prices have dropped significantly since the drought in 2012, while ethanol production has remained steady.<sup>3</sup> In 2013 the World Bank concluded that almost two-thirds of the post-2004 food price increase is attributable to the price of crude oil, reinforcing the near-perfect correlation of oil and food prices.

A co-product of the ethanol process is dried distiller's grain (DDGs), a valuable and unique feed product. Because the starch has been removed to produce ethanol, only protein, oil and fiber remain with the kernel. Dried distiller's grains concentrate the nutritional value. DDGs have reduced animal feed costs on the order of \$5 to \$20 per ton and DuPont enzymes further improve nutrient digestibility of animal feed and animal gut health. For example, DuPont's phytase enzyme improves the nutritional value of feed by unlocking the phosphorus tied up by phytic acids in plants. This enzyme also reduces the need to add organic phosphate to feed which is an added cost to the farmer and results in higher phosphorous levels in manure and run-off.

**V. Auto manufactures have increased the number of vehicles that can accept higher ethanol blends.**

Approximately 80 percent of current light-duty automobiles in service today were built in 2001 or later, meaning four out of every five cars and light trucks on the road are approved by EPA to use fuel with up to 15 percent ethanol. The use of E15 is explicitly approved by the manufactures of more than 60 percent of model year (MY) 2014 light-duty vehicles sold in the United States.<sup>4</sup> Automakers offering unequivocal E15 warranty coverage for some or all of their MY2014 vehicles (regardless of whether they are flex-fuel vehicles) include: General Motors, Ford, Toyota, Honda, Volkswagen, Mercedes-Benz, Jaguar, and Land Rover. All of these automakers also manufacture flex-fuel vehicles (FFVs), capable of operating on blends up to E85. Moreover, all automakers manufacturing flex-fuel vehicles including Chrysler, Nissan and Audi, warranty the use of E15 in flex-fuel vehicles.

For E85 flex fuel vehicles, some of the major automobile manufacturers in the U.S., including Ford, Chrysler and General Motors, have all pledged to make 50% of all new vehicles coming off their assembly line model year 2012 and beyond FFVs.

In addition to lower prices and improved environmental footprint, E15 is a high quality fuel. Since 2011, NASCAR has been partnering with American Ethanol and competitors in the motorsport's three major national racing series—NASCAR Sprint Cup Series, NASCAR Nationwide Series, and NASCAR Camping World Truck Series—have reached more than three million miles in race, practice and qualifying on E15. NASCAR officially hit the three million mile mark with the new fuel in mid-September 2012 at the Hawaii Motor Speedway.

**VI. Small engines and other non-road use engines can successfully run on ethanol blends.**

While it is always best that customers purchase only the fuel recommended by the equipment manufacturer, small engines can run on ethanol blends. Like all gasoline, ethanol blended

---

<sup>3</sup> [http://www.farmdoc.illinois.edu/manage/uspricehistory/us\\_price\\_history.html](http://www.farmdoc.illinois.edu/manage/uspricehistory/us_price_history.html)

<sup>4</sup> [http://ethanolrfa.3cdn.net/105417c2c09af674d7\\_2vm6bfniy.pdf](http://ethanolrfa.3cdn.net/105417c2c09af674d7_2vm6bfniy.pdf)





gasoline can go stale. Stale fuel is nothing new and existed long before there was any ethanol blended fuel. While ethanol separation can be a problem there are simple solutions that can be taken to prevent it. ECHO Outdoor Power Equipment recommends:

- Using proper fuel containers that do not have open or leaking spouts or separate vents. Fuel exposed to air attracts moisture;
- Purchasing only enough fuel for 30 days of use;
- Shaking the fuel container for 30 seconds just prior to filling equipment. This practice ensures the fuel is mixed properly and helps to suspend any small amounts of moisture in the mixture.
- Storing fuel in a cool dry area, which extends fuel life and slows the aging process;
- When storing the equipment for over 30 days, drain the fuel completely from the carburetor and the fuel tank.

As a company with a 211-year history of technical innovation and manufacturing expertise, DuPont has invested hundreds of millions of dollars to develop technologies that will deliver additional home-grown energy, along with abundant food, feed, and materials globally. We urge you to oppose S.B. 717 S.D.2, which would impose additional economic burdens on Hawaii families and businesses, while denying access to biofuels' present and future benefits.



777 North Capitol Street, NE, Suite 805, Washington, D.C. 20002

PHONE 202.545.4000 FAX 202.545.4001

GrowthEnergy.org

April 8, 2015

Representative Henry J.C. Aquino, Chairman  
Representative Matthew S. LoPresti, Vice Chairman  
House Committee on Transportation  
Hawaii State Capitol  
415 South Beretania Street  
Honolulu, HI 96813

Dear Chairman Aquino, Vice Chairman LoPresti, and the members of the Transportation Committee:

Growth Energy is the leading trade association for America's ethanol producers and thousands of ethanol supporters. Growth Energy promotes decreasing our dependence on foreign oil, improving our environment, and creating American jobs through the expanded use of ethanol in gasoline. I write to you today in opposition to SB 717, legislation that would remove Hawaii's requirement that gasoline contain 10 percent ethanol. This legislation is unnecessary and would simply increase fuel costs for Hawaii's consumers.

Ethanol blended fuel has been critical to our nation's energy supply, national security, and helps to grow America's economy. Ethanol has been exhaustively tested and has been conclusively proven to be safe and effective for motor vehicle use and reduces toxic emissions such as carbon monoxide, benzene, and particulate matter. Additionally, the World Bank, the U.S. Department of Agriculture, and other third parties have concluded that ethanol production has had little impact on recent food inflation, and now corn actually costs less than it did when the bulk of the nation's ethanol production began in 2007.

Ethanol produced here in the U.S. helps reduce our dangerous dependence on foreign oil and saves American consumers \$100 billion each year in gasoline costs. Additionally, our industry contributes nearly \$53 billion to the U.S. economy and provides nearly 400,000 jobs that cannot be outsourced. In fact, according to a recent study by the Fuels America Coalition, Hawaii is the beneficiary of \$826.8 million of total economic output from biofuels each year. The biofuel sector in Hawaii supports 2,762 jobs, generates \$184.7 million in annual wages, contributing \$30 million in Federal taxes and \$33 million in Hawaii taxes.

Ethanol has also laid the groundwork for the development of next generation cellulosic and advanced biofuels in the state and throughout the country. Cellulosic and advanced biofuels, which can be produced from forest residues, algae, municipal solid waste, or other renewable sources of biomass, offer some of the most promising solutions to our dangerous dependence on foreign oil.

Actions potentially taken by the state of Hawaii to remove ethanol as a gasoline additive only make it more difficult for innovative, local companies to achieve the financing they need by limiting the market for these clean renewable biofuels.

The bill, if passed, would only increase costs at the pump for Hawaii consumers. From January 1, 2013, to the present, wholesale ethanol sold at an average 67 cent discount per gallon compared to the wholesale cost of gasoline, so a bill seeking to remove ethanol from the fuel supply would drive up costs to consumers. Additionally, the legislation would threaten the further development of cellulosic biofuels. Today, there is limited cellulosic production but the majority of production that is set to come online is done so with the use of renewable biomass. The country's first commercial cellulosic biorefinery, POET's Project Liberty, is a \$250 million project in Emmetsburg, Iowa, which opened in September of last year. Abengoa has a similar plant that opened in Hugoton, Kansas, in October. DuPont also has a plant expected to come online this year that uses the same type of technology to derive cellulosic biofuel from biomass. Using biomass for cellulosic biofuel has the potential to be used in all 50 states including Hawaii. With passage of SB 717, there would be uncertainty in the Hawaiian fuel marketplace for these biofuels, and this technology could be stifled.

We would be happy to further discuss the benefits of ethanol and biofuels with you, but strongly urge you to reject SB 717 because of its potential to harm Hawaii consumers and to continue our dangerous dependence on foreign oil.

Sincerely,



Tom Buis  
CEO, Growth Energy



**Testimony of the  
Biotechnology Industry Organization (BIO)**

Hearing of the Hawaii House Transportation Committee  
April 7, 2015

**Regarding Hawaii SB 717:**

**“AN ACT TO REPEAL THE REQUIREMENT THAT GASOLINE FOR MOTOR  
VEHICLES IN THE STATE INCLUDE 10% ETHANOL”**

The Honorable Henry J.C. Aquino, Committee Chair  
The Honorable Matthew S. LoPresti, Committee Vice-Chair  
And the Members of the Transportation Committee:

Chairman Aquino, Vice Chairman LoPresti, and Members of the Committee, the Biotechnology Industry Organization (“BIO”) appreciates this opportunity to provide comments on SB 717, legislation repealing the requirement that gasoline for motor vehicles in the state include 10% ethanol. This proposal is of significant concern to BIO and its members in the State of Hawaii and throughout the country.

BIO is the world’s largest biotechnology organization with more than 1,000 member companies worldwide. BIO represents leading technology companies in the production of conventional and advanced biofuels, renewable chemicals, biobased products and other sustainable solutions to energy and climate challenges. BIO also represents the leading developers of new crop technologies for food, feed, fiber, and fuel.

BIO opposes SB 717 because of the impact such legislation would have on research, development and commercialization of advanced and cellulosic biofuels and other innovative products of industrial biotechnology in Hawaii and throughout the country, and on the price of gasoline for Hawaii consumers. It needlessly restricts consumer choice; risks exposing Hawaii residents to higher gas prices and increased emissions of greenhouse gases (GHGs) and other pollutants; and puts at risk Hawaii’s future job growth in biotechnology.

The national adoption of ethanol and other biofuels has played an important role in reducing U.S. dependence on foreign sources of petroleum, in reducing transportation fuel costs to the consumer, and in beginning to reduce the carbon intensity of the nation’s transportation fuels. It has also paved the way for promising next generation cellulosic and advanced biofuels being developed in the State of Hawaii and throughout the country. Limiting the use of ethanol thus closes off a major source of potential economic development in the State that



would come from its production of ethanol from feedstocks grown in HI, such as sugarcane, energy grasses, and algae. It also prevents the use of more sustainable fuels.

Cellulosic and advanced biofuels, which can be produced from forest residues, algae, municipal solid waste, or other renewable sources of biomass, offer some of the most promising solutions to high gas prices, U.S. dependence on foreign petroleum, and job losses in resource-dependent regions of the country, such as Hawaii. Innovative industrial biotechnology developers – including Cellana Corporation, a leading developer of algae-based bioproducts, based right here in Hawaii – already face a very challenging environment trying to secure private capital to commercialize their technologies.

Actions by the State of Hawaii to repeal the state's renewable fuel standard only exacerbate the financing challenge to local companies by destabilizing the policy environment for all biofuels. For example, the recent proposal by the U.S. Environmental Protection Agency (EPA) to limit conventional biofuel volumes in 2014 under the federal Renewable Fuel Standard (RFS) has resulted in suspension of commercialization plans by several leading cellulosic biofuel developers.<sup>i, ii</sup>

Hawaii has also been home to the Navy biofuel research conducted at the U.S. Pacific Command and the Great Green Fleet. The Navy, like Hawaii, is almost totally dependent on fossil fuels which are priced on a global market. Continued support of biofuels in Hawaii will help advance both the state and military's goals of energy and national security.

Moreover, Hawaii has received over \$79 million in USDA energy program funds developing renewable biomass in the state. Passing SB 717 would send the industry and its investors the wrong message and would chill investment in research and development for advanced and cellulosic biofuels – as well as other promising biobased technologies, such as renewable chemicals and plastics produced from algae – and possibly send the unintended signal to investors that Hawaii is hostile to all biofuels.

The proposed legislation also hurts Hawaii consumers. Simply having an alternative fuel in any market helps drive down the price for consumers at the pump. The production and use of renewable fuel has kept oil costs between \$15 and \$40 per barrel lower than they would have been.<sup>iii</sup> This translates to a reduction in gasoline prices at the pump between \$0.50 and \$1.50, saving U.S. consumers between \$700 billion and \$2.6 trillion during 2013.<sup>iv</sup> Price supports for advanced biofuels under the RFS compliance mechanisms will ensure that new fuels will also present significant value to consumers. In Hawaii, the cost of importing oil is high both economically and with respect to Hawaii's carbon footprint, since oil has to be transported such a long distance.



Sale of transportation fuel is heavily controlled by major oil companies through marketing agreements with branded retailers. As with advanced ethanol, emerging “drop-in” advanced biofuels, such as biobutanol and renewable hydrocarbon fuels, will require enforcement of fuel choice laws, such as the RFS, to provide investors with confidence that there will be market access for these new fuels when they are commercialized. Actions by states to limit market access to new fuel entrants substantially erode this confidence, further complicating the already challenging task of securing private capital for first-of-a-kind biorefineries. In addition, while Hawaii could produce its own ethanol from feedstocks grown on the island, it does not have a similar opportunity with respect to oil, since there are no opportunities for Hawaii to drill for oil.

Finally, repealing the state’s renewable fuel standard will increase emissions of GHGs and other pollutants resulting from combustion of transportation fuel in Hawaii. Refiners need ethanol for octane trimming. Removing ethanol increases use of toxic aromatics for octane and could expose the public to more air toxins. Ethanol is also used presently as an oxygenate, and helps states comply with their carbon monoxide standards. And by removing ethanol from the gasoline supply, Hawaii could make it more difficult for the state to meet its national ambient air quality standards under Federal law.

Renewable fuel use in the U.S. slashed greenhouse gas emissions by 33.4 million metric tons in 2012<sup>v</sup> and is expected to reach 138 million metric tons per year when the RFS is fully implemented in 2022.<sup>vi</sup> In practice, greenhouse gas reductions are likely to be even more significant. Many cellulosic and other advanced biofuel pathways approved by EPA already substantially exceed the minimum GHG reductions required by the law. For example, the INEOS Bio process, which is being commercialized at a new biorefinery in Vero Beach, Florida, reduces greenhouse gas emissions up to 109% — a net carbon savings. Future feedstock and conversion technology improvements will drive GHG reductions even further. In contrast, lifecycle GHG emissions for petroleum are increasing with time. “Well-to-Wheel GHG emissions” of gasoline produced from Canadian tar sands, for example, emit 14% to 20% more GHGs than the weighted average of transportation fuels sold or distributed domestically. The GHG reductions produced by biofuels are a vital part of the nation’s effort to combat climate change. It is crucial we maintain the opportunities for biofuels growth to achieve these environmental gains.

Companies like Cellana and DuPont and the more than 80 BIO members developing next generation biofuels, renewable chemicals and biobased products are working to create sustainable jobs for the future. A recent report, *U.S. Economic Impact of Advanced Biofuels Production: Perspectives to 2030*, indicates that cellulosic and advanced biofuels production



under the RFS could create over half a million jobs in the U.S., many of which would be tied to sustainable sources of renewable biomass like algae.<sup>vii</sup>

BIO urges the Committee to oppose SB 717. The proposed repeal of the state's renewable fuel standard would hurt consumers at the pump and would undermine investment in the continued research, development and production of advanced and cellulosic biofuels in Hawaii and beyond.

---

<sup>i</sup> <http://thehill.com/blogs/congress-blog/energy-environment/196891-wavering-policy-spells-disaster-for-renewable-fuel>;

<sup>ii</sup> <http://biomassmagazine.com/articles/9920/industry-says-rfs-proposal-will-chill-cellulosic-investments>

<sup>iii</sup> Philip K. Verleger, "Doubling World Oil Prices: The Success of International Energy Agreements," The Petroleum Economics Monthly, Vol. XXX, No. 8, Aug. 2013.

<sup>iv</sup> Philip K. Verleger, "Commentary: Renewable Fuels Legislation Cuts Crude Prices." PKVerlegerLLC.com, Sept. 23, 2013. [http://www.pkverlegerllc.com/assets/documents/130923\\_Commentary1.pdf](http://www.pkverlegerllc.com/assets/documents/130923_Commentary1.pdf)

<sup>v</sup> Renewable Fuels Association, "Battling for the Barrel: 2013 Ethanol Industry Outlook." Washington, DC: February 2013, p.18.

<sup>vi</sup> US EPA, "Renewable Fuel Standard Program (RFS2) Regulatory Impact Analysis." Washington, DC: EPA-420-R-10-006, February 2010.

<sup>vii</sup> <http://bio.org/ind/advbio/EconomicImpactAdvancedBiofuels.pdf>

**BIOENERGY ASSOCIATES LLC**  
**1050 BISHOP STREET SUITE 371**  
**HONOLULU, HI 96813**

April 6, 2015

Representative Henry J. C. Aquino, Chair  
Representative Matthew S. LoPresti, Vice Chair  
And Members of the Committee on Transportation  
Hawaii State Capitol  
415 S. Beretania  
Honolulu, HI 96813

Re: SB 717 SD2 – Relating to Ethanol

Dear Chair Aquino, Vice Chair LoPresti and Members of the Committee,

My name is William Maloney and I am the President of Bioenergy Associates LLC, a consulting firm specializing in the renewable fuels and renewable energy. I testify today in opposition to SB 717 SD2 which would repeal the ten per cent ethanol by volume requirement for gasoline sold in Hawaii for use in motor vehicles.

To provide you some background on myself, I am an internationally recognized expert on biofuels, and provide consulting services to both petroleum companies and biofuel producers and traders, and have been active in Hawaii in both project development and the petroleum and renewable fuels trade for many years. I am also uniquely aware of the specifics of ethanol as it relates to the Hawaiian market because I also serve as a biofuels consultant for a large Hawaiian petroleum distribution company.

I was intimately involved with the rule promulgation for the ethanol blending requirement, which underwent detailed analysis and scrutiny including third party analysis by Stillwater Associates, petroleum industry experts retained by the State of Hawaii. I fear that since a great deal of time has passed a great deal of institutional memory has been lost, within the legislature, and also within DBEDT, who meticulously and with input from many parties, promulgated the rules for the ethanol blending requirement in 2004.

Section 1 of SB717 SD2 states that “This requirement of blending ethanol into Hawaii's gasoline does not produce any economic benefit for the State; further, the import of ethanol creates an economic burden for state residents.” This premise on which the bill is based is simply factually incorrect, as the opposite is true – even if the ethanol being blended into Hawaii’s gasoline is imported.

The ethanol blending mandate was enacted for several reasons, including:

- 1) to ensure a local market for fuel ethanol, and thereby to spur investment in local ethanol production;
- 2) to introduce price competition into Hawaii’s petroleum sector, as previous to the mandate the local refineries refused to produce a base gasoline suitable for ethanol blending, blocking independent oil companies from blending the less-expensive ethanol, and stifling competition in the petroleum sector;
- 3) to provide Hawaii’s consumers with cleaner burning gasoline, reducing toxic emissions;
- 4) to reduce the use of fossil fuels, and convert to renewable fuels;



- 5) to reduce imports of petroleum from non-US sources, and, perhaps most importantly;
- 6) to lower the carbon content of Hawaii's fuels and thereby reduce greenhouse gas emissions.

While there has yet to be local ethanol production, despite the efforts of many, and millions of dollars of investment in attempts to create local production, the ethanol mandate has been very successful in accomplishing all of the other very desirable objectives – it has and will continue to benefit Hawaii's consumers with price competition by creating downward pressure on wholesale gasoline prices with E-10 blends, and has been and will continue to significantly reduce greenhouse gas emissions from Hawaii's motor vehicles.

I oppose SB 717 SD2 for several reasons, which I summarize below:

- The current requirement only mandates ethanol be blended if its net cost is lower than gasoline - which protects consumers.<sup>1</sup> If ethanol costs more than gasoline, and its blending would drive up gasoline prices, its blending is not required. An excerpt of the governing Hawaii Administrative Rule is attached as Appendix 1, defining the competitively priced requirement. The historical and current price relationships between ethanol and gasoline make it clearly evident that Hawaii has benefitted from the ethanol blending requirement, and will continue to benefit from the ethanol blending requirement. Currently, the Oil Price Information Service ("OPIS") reports that the West Coast prices of ethanol and gasoline, which Hawaii's ethanol and gasoline petroleum prices relate to, indicate that ethanol is currently priced ~\$0.25 per gallon below the price of gasoline<sup>2</sup>.

OPIS and the US Energy Information Administration (US EIA) price information reveal that over the period Jan 2011 – Feb 2015 US West Coast net ethanol prices also averaged ~\$0.39 per gallon less than gasoline prices, and ethanol was priced lower 87% of the reporting days. **Assuming 36 million gallons per annum of ethanol blended in Hawaii annually, over the four year period 2011 – 2014 alone this resulted in over \$53 million of cost savings attributable to the ethanol blending requirement.** The cost savings would more than double if one calculates back to the inception of the ethanol blending requirement in 2006.

- Prior to the rule promulgation in 2004 and commencement of the requirement in 2006, the refiners refused to cooperate to either contract for local ethanol production or allow the independents (at the time Aloha and ConocoPhillips as 76 Brand) to blend ethanol, that had a significant price advantage over gasoline in the marketplace. This was done to impede competition in the petroleum sector. The refiners have to produce a base gasoline, called a BOB (base oxygenate blendstock), suitable for ethanol blending, and prior to the ethanol blending requirement they simply refused to do so - as blending ethanol by the independents would enable them to lower prices using the lower net cost of ethanol. I am concerned, and suggest legislators should recognize that without the ethanol blending requirement the refiners will likely, once again, impede competition in the marketplace by ceasing to produce a BOB, resulting in reduced competition and higher gasoline prices for Hawaiian consumers.
- The federal Renewable Fuel Standard which requires biofuels, including ethanol and biodiesel nationally, has a provision that allows refiners not to blend, and to instead buy credits, called RINS (for Renewable

---

<sup>1</sup> Hawaii Administrative Rules. Title 15, Department of Business Economic Development & Tourism. Chapter 15. Ethanol Content in Gasoline.

Identification Numbers). This is the cost to not-blend. RIN values make the net cost of ethanol blending more than competitive with gasoline, even at lower gasoline prices.<sup>3</sup> The OPIS price report dated April 2, 2015 reported mean 2015 RIN prices at \$0.6865 per gallon<sup>4</sup>, meaning that refiners in Hawaii could buy RINS at that price, and simply raise the wholesale price of gasoline by \$0.0685 per gallon (one-tenth of the RIN price per gallon of gasoline as impact of 10% ethanol), and pass the additional cost on to independents distributors and consumers, without anyone knowing. At the same time, they might simply dump more toxics in the gasoline, and impede the independent distributor from blending ethanol to remain competitive, by no longer producing the BOB.

In prior testimony before a previous Committee the issue has been raised that the actual cost of ethanol is greater than gasoline because ethanol has a lower energy content than gasoline, and therefore will result in reduced fuel economy. While it is correct that the Btu content of ethanol is ~76,000 Btu/gallon, and regular gasoline has a Btu content of ~116,000 Btu/gallon, and the US DOE website does say, “since ethanol contains about two-thirds as much energy as gasoline, vehicles will typically go 3% to 4% fewer miles per gallon on E10”, to state or conclude that this means ethanol costs more than gasoline and is detrimental to consumers, is simplistic, inaccurate and a misstatement of the facts. The issues involved are much more complicated. The value of ethanol is determined not just by its Btu value, but also its value as a high octane, oxygenate blendstock, and that under federal law ethanol has to either be blended, or credits purchased. Ethanol provides more horsepower (it is, after all, a racing fuel), and improves automobile performance. The fact that ethanol also reduces pollution and greenhouse gases, should also be factored in, to determine, based on all of the relevant factors, and not just fuel economy, whether it is a net positive or net negative to Hawaiian consumers.

Ethanol value is based on a variety of factors, not just its volume displacement of gasoline (which as discussed above has an average historical cost \$0.39 per gallon below that of gasoline). If one accepts a reduced fuel economy of 3.3% in an E-10 blend, at current retail prices of ~\$3.00 per gallon of gasoline, this results in a negative \$0.099 per gallon price impact – when offset by the average ethanol price discount of \$0.39 per gallon, yields a net negative impact of ~\$0.06 per gallon of E-10. However, the US Renewable Fuel Standard requires refiners blend ethanol, or buy credits (RINS), and at a current RIN value of \$0.685 per gallon of ethanol, this creates a non-ethanol use cost of \$0.0685 per gallon of non-ethanol blended gasoline. This factor results in ethanol having a net positive value to consumers of just under \$0.01 per gallon of gasoline. When the additional refinery cost to replace ethanol’s octane is factored in, ~\$0.20 per gallon of ethanol, or \$0.02 per gallon of gasoline<sup>5</sup>, ethanol’s value to Hawaiian consumers increases to ~\$0.03 per gallon of gasoline – or ~\$0.30 for every gallon of ethanol blended. Ethanol is also an oxygenate, which with higher octane increases the efficiency of engines in combusting all the fuel, which also offsets, at increasingly higher levels as engines compression ratios increase, the typically accepted premise of reduced fuel economy – in fact it is projected that due to ethanol’s octane and oxygenate characteristics that in the future it will increase fuel economy. Assuming just a 1% improvement in the fuel economy discount for current benefits in higher compression engines, yields another \$0.10 per gallon in ethanol’s blending value – or a total of ~\$0.40 for every gallon of ethanol blended. This

---

<sup>2</sup> Oil Price Information Service, Ethanol and Biodiesel Information Service, April 2, 2015, Volume 12 Issue 14. LA Gasoline Price \$1.93515 and Ethanol Price \$1.6875.

<sup>3</sup> US Energy Information Administration, Today in Energy, February 23, 2015, “Higher RIN Prices Support Continued Ethanol Blending Despite Lower Gasoline Prices”.

<sup>4</sup> Oil Price Information Service Ethanol and Biodiesel Information Service, April 2, 2015, Volume 12 Issue 14.

<sup>5</sup> Hawaii Ethanol Alternatives, study conducted by Stillwater Associates, for the Hawaii Department of Business, Economic Development & Tourism, Strategic Industries Division, October 2003.

doesn't even include the value derived from toxic emission and greenhouse gas reduction. The Table below sets forth the factors and values.

### Factors and Values Impacting Consumer Value of Ethanol in Hawaii Gasoline

| Item                                                                                                          | \$ per Gallon Ethanol | Equivalent \$ per Gallon E-10 Gasoline Blend | Cumulative Net Position per Gallon of Gasoline | Basis                                                                                                                                                                                                                                                      |
|---------------------------------------------------------------------------------------------------------------|-----------------------|----------------------------------------------|------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Theoretical Fuel Economy Reduction in E-10 Blends (3.3%), assuming 1/3 less Btu per gallon ethanol / gasoline | \$0.99                | -\$0.099                                     | -\$0.099                                       | Assuming \$3.00 per gallon retail price times 3.3% reduced fuel economy in blend (April 2015 retail price)                                                                                                                                                 |
| Refiner Cost of Purchasing RIN's to meet Federal Compliance Under Federal Renewable Fuel Standard             | \$0.685               | +\$0.0685                                    | -\$0.0305                                      | Federal requirement for refiners to either blend, or purchase credits, price is Oil Price Information Service ("OPIS") quoted prices on April 2, 2015.                                                                                                     |
| Refiner Increase In Refinery Operating Costs to Produce Higher Octane Base Gasoline                           | \$0.20                | +\$0.020                                     | -\$0.0105                                      | Stillwater Report prepared for State of Hawaii. Industry standard per US Department of Energy and US EPA is that ethanol is best octane option if priced 1.1 X wholesale gasoline price, i.e., (\$0.53 per gallon above current West Coast ethanol price). |
| Average Lower Ethanol Price Compared to Gasoline                                                              | \$0.39                | +\$0.039                                     | +0.0285                                        | US West Coast Avg. wholesale Gasoline Price compared to net wholesale Ethanol Price as reported by OPIS (Jan 2011 – Feb 2015)                                                                                                                              |
| Improved Fuel Economy from Improved Combustion from use of Oxygenate (Ethanol)                                | \$0.10                | +\$0.01                                      | +\$0.0385                                      | High compression ratio engines will have lower fuel economy impact, and in the future projected improved fuel economy with use of ethanol. Value in future could be significantly higher.                                                                  |
| Value of Reduced Tailpipe Emissions                                                                           |                       | Not Included in Analysis                     | Not Included in Analysis                       | Reductions in tailpipe emissions of toxic components, e.g., benzene, toluene, xylene.                                                                                                                                                                      |
| Value of Reduced CO2 / Greenhouse Gas Emissions from Ethanol Use                                              |                       | Not Included in Analysis                     | Not Included in Analysis                       | Annual Greenhouse Gas Reduction from Hawaii gasoline of 115,000 – 173,000 tons.                                                                                                                                                                            |

I have included with this testimony independent examinations of ethanol's octane value – where it has been determined that ethanol is the lowest cost blendstock for octane provide it's price is 1.1 times the wholesale gasoline price – and based on alternative blendstock values (toluene, xylene and benzene) may have a value over 1.3 times the wholesale gasoline price – meaning that ethanol's octane value could be well in excess of the \$0.20 per gallon ethanol / \$0.02 per gallon of gasoline included above<sup>6</sup>. The US Department of Energy examined and also concluded that ethanol's octane value exceeded the value of gasoline and even when priced higher than gasoline was an economic blending component.<sup>7</sup>

Whitfield Oil Company, a Southeast US independent oil company, has published a paper on the value of octane and proper combustion of fuels in high compression engines<sup>8</sup>. It provides a simple explanation of why Hawaiian consumers are better off having a gasoline a slightly lower Btu value, but one which provides greater horsepower, and has better combustion characteristics, meaning that ultimately the horsepower is provided to the tires on the road, and not lost in uncombusted fuel contained in tailpipe emissions.

<sup>6</sup> Irwin S. and D. Good. "Further Evidence on the Competitiveness of Ethanol in Gasoline Blends." farmdoc daily (5):17 Department of Agricultural and Consumer Economics, University of Illinois Urbana-Champaign, January 30, 2015.

<sup>7</sup> United States Department of Energy: Analysis in Support of the EPA Evaluation of Waivers of the Renewable Fuel Standard, November 2012.

<sup>8</sup> BTU Content of Gasoline, Whitfield Oil Company. [www.whitfieldoil.com/www/docs/171.286/racing-gasoline-html](http://www.whitfieldoil.com/www/docs/171.286/racing-gasoline-html)

The above information, based on facts of published ethanol prices and industry accepted impacts from ethanol as a high octane oxygenate gasoline blendstock debunk the simplistic and misleading contention that requiring ethanol blending creates an economic burden for State residents. The opposite is true.

- Ethanol blending was implemented to reduce the greenhouse gas emissions emanating from Hawaiian gasoline. As an island state greenhouse gases and global climate change are existential issues. Both California and Oregon have instituted low carbon fuel requirements that recognize the increasing positive impact of ethanol as a low carbon fuel. Washington State's Governor Jay Inslee has recently proposed similar legislation. It is ironic that Hawaii, who was a leader in this area, and is more greatly influenced by the effects of climate change, is considering stepping back from requiring a reduction in greenhouse gas emissions by requiring ethanol blending in gasoline.
- The US Department of Energy using The Greenhouse Gases, Regulated Emissions, and Energy Use in Transportation Model developed by Argonne National Laboratory ("GREET") estimates that each gallon of ethanol blended has a resultant greenhouse gas reduction of 34% for corn ethanol and 51% for sugarcane ethanol (both have been and are blended in Hawaii).<sup>9</sup> The Table below sets forth the conclusions from the above referenced comprehensive study conducted by the US Department of Energy's Argonne National Laboratory comparing the life cycle emissions ethanol and petroleum.

Table 7. Well To Wheels GHG emission reductions for five ethanol pathways (relative to WTW GHG emissions for petroleum gasoline). (Note: Values in the table are Greenhouse Gas ("GHG") reductions for P10–P90 (P50), all relative to the P50 value of gasoline GHG emissions.)

| Well To Wheels GHG Emission Reductions | Corn            | Sugarcane       | Corn Stover      | Switchgrass     | Miscanthus         |
|----------------------------------------|-----------------|-----------------|------------------|-----------------|--------------------|
| Including Land Use Changes Emissions   | 19-48%<br>(34%) | 40-62%<br>(51%) | 90-103%<br>(96%) | 77-97%<br>(88%) | 101-115%<br>(108%) |
| Excluding Land Use Changes Emissions   | 29-47%<br>(44%) | 66-71%<br>(68%) | 89-102%<br>(94%) | 79-98%<br>(89%) | 88-102%<br>(95%)   |

Using the US EPA's estimate of 19.4 pounds of CO<sub>2</sub> per gallon of gasoline, and 35 million gallons per year of ethanol blended in Hawaii, and the lower estimate of corn ethanol with land use changes emissions, **the greenhouse gas reduction is an estimated 115,430 tons - 173,745 tons per annum, meaning over the initial nine years of ethanol being blended in Hawaii's gasoline, a minimum of an estimated 1,038,870 tons - 1,558,305 tons of greenhouse gas reduction has already been achieved.**

- The current requirement only requires ethanol be blended in 85% of Hawaiian gasoline - leaving room for supply disruptions, and instances where non-ethanol blends may be preferred, e.g., certain antique cars, boats, etc.

<sup>9</sup> Well-to-Wheels Energy Use and Greenhouse Gas Emissions of Ethanol From Corn, Sugarcane and Cellulosic Biomass for US Use. Michael Wang, Jeongwoo Han, Jennifer B Dunn, Hao Cai and Amgad Elgowainy. Systems Assessment Group, Energy Systems Division, Argonne National Laboratory, 9700 South Cass Avenue, Argonne, IL 60439, USA. Published 13 December 2012. Online at [stacks.iop.org/ERL/7/045905](http://stacks.iop.org/ERL/7/045905).

- Requiring blending at the State level ensures that there is a significant reduction in the pollution characteristics of tailpipe emissions, backing out toxic and in some cases carcinogenic aromatics like benzene, toluene, and xylene from Hawaiian gasoline.

All of the above are compelling reasons why the existing State of Hawaii ethanol blending requirement should be maintained, and should not be repealed, or modified in any way. It is clear that repeal will not only eliminate any further investment initiatives in local ethanol production, but will reduce competition in the petroleum sector, creating upward pressure on petroleum prices, possibly lead to increased pollution from toxics, potentially increase dependence on foreign fossil fuels, and will necessarily and significantly contribute to increased greenhouse gas emissions.

In conclusion, as the Committee, and the Hawaii legislature, examines ethanol use in gasoline, and the requirement to blend 10% ethanol in 85% of Hawaii's gasoline anecdotes and assertions not supported by independent facts or publicly disseminated market pricing should not form the basis of public policy decisions. Blending ethanol in Hawaii has been and is a significant net benefit to Hawaii, its environment and its consumers. I urge you and your colleagues to apprise yourselves of the facts included herein, available from published and peer reviewed data, and to stop attempts to implement poor public policy decisions by based on false premises or misrepresented or misunderstood information.

I urge you to oppose SB 717 SD2, as the basis for ceasing the ethanol blending requirement are incorrect, and the benefits to Hawaii far outweigh any negatives.

Thank you for the opportunity to testify, and for your consideration.

Sincerely,

By /s/ *William M. Maloney*

William Maloney

President

Bioenergy Associates LLC

"HAWAII ADMINISTRATIVE RULES

TITLE 15

DEPARTMENT OF BUSINESS, ECONOMIC DEVELOPMENT AND  
TOURISM

CHAPTER 35

ETHANOL CONTENT IN GASOLINE

- §15-35-1 Purpose.
- §15-35-2 Definitions.
- §15-35-3 Schedule of ethanol content requirement.
- §15-35-4 Minimum ethanol content requirement.
- §15-35-5 Monitoring of ethanol content.
- §15-35-6 Ethanol based additives.
- §15-35-7 Monthly reporting requirements of distributors.
- §15-35-8 Opportunity for quarterly reporting by distributors.
- §15-35-9 Request for an exemption.
- §15-35-10 Process for granting an exemption.
- §15-35-11 Violations.
- §15-35-12 Severability.
- §15-35-13 Referral to attorney general.

Historical Note: The mandate requiring blending of ten per cent ethanol in motor fuel in the State was originally introduced in 1994 through Act 199. The ethanol mandate language in Act 199 became part of chapter 486E, Hawaii Revised Statutes. Chapter 486E was replaced in 1997 by Chapter 486J, Hawaii Revised Statutes. Substantive changes relative to the ethanol blending mandate have been made to incorporate provisions of Act 77, SLH 2002, which amended chapter 486J, Hawaii Revised Statutes, by: 1) requiring the "petroleum commissioner" to refer intentional violations to the attorney general, who may exercise

appropriate legal or equitable remedies available to the State; and 2) changing references to the department and the director of business, economic development, and tourism in the Petroleum Reporting Act to the "petroleum commissioner", who is to be the head of the department's energy, resources, and technology division.

§15-35-1 Purpose. The purpose of this chapter is to provide rules governing implementation of the requirement that gasoline sold in the State for use in motor vehicles contain ten per cent ethanol by volume, as authorized under chapter 486J-10, Hawaii Revised Statutes. [Eff. **OCT 02 2004** ] (Auth: HRS § 486J-10) (Imp: HRS § 486J-10)

§15-35-2 Definitions. As used in this chapter, unless a different meaning clearly appears in the context:

"Certified" means signed by an authorized company representative and declared to be complete, true, and accurate.

"CIF Honolulu terminal" denotes the quoted sales price of motor fuel, which includes the cost, insurance, excise tax, and freight charges to any terminal in Honolulu, Hawaii.

"Comparable grade" means the grade, based on octane rating, of the finished (blended) fuel.

"Regular" refers to gasoline having an octane rating greater than or equal to 85 and less than 88.

"Midgrade" refers to gasoline having an octane rating greater than or equal to 88 and less than or equal to 90. "Premium" refers to gasoline having an octane rating greater than 90.

\* "Competitively priced" means fuel-grade ethanol CIF Honolulu terminal for which the wholesale price, minus the value of all applicable federal, state, and county tax credits and exemptions, is not more than the average posted wholesale rack price of unleaded





gasoline of comparable grade, as published by the U.S. Department of Energy, Energy Information Administration in Petroleum Marketing Monthly, Table 31 and available on the Energy Information Administration website, or as otherwise published or posted, as prescribed by the petroleum commissioner.

"Denatured fuel ethanol" means fuel-grade ethanol which meets specification ASTM D 4806, "Standard Specification for Denatured Fuel Ethanol for Blending with Gasoline for Use as Automotive Spark Ignition Engine Fuel" published by the American Society for Testing and Materials.

"Distributor" means and includes:

- (1) Every person who refines, manufactures, produces, or compounds spark ignition engine fuel in the State, and sells it at wholesale or to retail dealers;
- (2) Every person who imports or causes to be imported into the State or exports or causes to be exported from the State, any spark ignition engine fuel;
- (3) Every person who acquires spark ignition engine fuel through exchanges with another distributor; and
- (4) Every person who acquires spark ignition engine fuel from a licensed distributor as a wholesaler thereof.

"Gasoline" includes conventional, oxygenated, and reformulated gasolines.

"Person" means any person, firm, association, organization, partnership, business trust, limited liability corporation, corporation, or company.

"Person" also includes any city, county, public district or agency, the State or any department or agency thereof, and the United States to the extent authorized by federal law.

"Petroleum commissioner" or "commissioner" is as defined in §486J-1, Hawaii Revised Statutes.

"Retail dealer" means and includes a person who purchases liquid fuel from a licensed distributor, and



# OPIS Ethanol & Biodiesel Information Service

Pricing, News and Analysis for Buying and Supplying Ethanol-Blended Fuel and Biodiesel

April 6, 2015 • Volume 12, Issue 14

## Ethanol Futures (cts/gal contract price)

|      | May 2015 | June 2015 | July 2015 | August 2015 |
|------|----------|-----------|-----------|-------------|
| CBOT | 157.30   | 156.30    | 153.10    | 151.40      |

Settlement Thursday, April 2, 2015 Source: Chicago Board of Trade

## Ethanol & Gasoline Component Spot Market Prices

### U.S. RINs (prices in U.S. \$/RIN)

|                                   | Fri. 03/27    | Mon. 03/30    | Tues. 03/31   | Wed. 04/01    | Thurs. 04/02  | Wkly. Avg. |
|-----------------------------------|---------------|---------------|---------------|---------------|---------------|------------|
| <b>U.S. Ethanol RINs</b>          |               |               |               |               |               |            |
| Current Yr                        | 0.6800-0.6950 | 0.6875-0.6975 | 0.6825-0.6900 | 0.6825-0.6850 | 0.6800-0.6850 | 0.68650    |
| Previous Yr                       | 0.6900-0.7050 | 0.6975-0.7125 | 0.6950-0.7050 | 0.7000-0.7100 | 0.7000-0.7100 | 0.70250    |
| <b>U.S. Cellulosic RINs</b>       |               |               |               |               |               |            |
| Current Yr                        | 0.6350-0.6450 | 0.6350-0.6450 | 0.6350-0.6450 | 0.6350-0.6450 | 0.6350-0.6450 | 0.64000    |
| Previous Yr                       | 0.4850-0.4950 | 0.4850-0.4950 | 0.4850-0.4950 | 0.4850-0.4950 | 0.4850-0.4950 | 0.49000    |
| <b>U.S. Biodiesel RINs</b>        |               |               |               |               |               |            |
| Current Yr                        | 0.7950-0.8300 | 0.8100-0.8200 | 0.8050-0.8150 | 0.8000-0.8050 | 0.8000-0.8100 | 0.80900    |
| Previous Yr                       | 0.7500-0.7900 | 0.7600-0.7900 | 0.7600-0.7800 | 0.7500-0.7700 | 0.7550-0.7700 | 0.76750    |
| <b>U.S. Advanced Biofuel RINs</b> |               |               |               |               |               |            |
| Current Yr                        | 0.7700-0.7900 | 0.7600-0.8000 | 0.7600-0.7900 | 0.7500-0.7900 | 0.7500-0.7800 | 0.77400    |
| Previous Yr                       | 0.7300-0.7400 | 0.7200-0.7500 | 0.7300-0.7500 | 0.7200-0.7500 | 0.7100-0.7300 | 0.73300    |

### Chicago (prices in U.S. \$/gal.)

|          | Fri. 03/27    | Mon. 03/30    | Tues. 03/31   | Wed. 04/01    | Thurs. 04/02  | Wkly. Avg. |
|----------|---------------|---------------|---------------|---------------|---------------|------------|
| Ethanol  | 1.4850-1.4900 | 1.5050-1.5150 | 1.4800-1.4900 | 1.5200-1.5400 | 1.5600-1.5700 | 1.51550    |
| DP ETH   | 1.4800-1.4900 | 1.5000-1.5150 | 1.4800-1.4900 | 1.5200-1.5400 | 1.5600-1.5700 | 1.51450    |
| B100 SME | 2.9300-3.0300 | 2.9400-3.0400 | 2.9300-3.0300 | 2.9700-3.0700 | 2.9000-3.0300 | 2.98700    |
| RBOB Unl | 1.8368-1.8468 | 1.8202-1.8302 | 1.7200-1.7700 | 1.7762-1.7862 | 1.7633-1.7863 | 1.79360    |
| RBOB Pre | 2.0618-2.0718 | 2.0452-2.0552 | 1.9550-2.0050 | 1.9912-2.0012 | 2.0333-2.0563 | 2.02760    |
| CBOB Unl | 1.6468-1.6568 | 1.6302-1.6402 | 1.5400-1.5900 | 1.5962-1.6062 | 1.5833-1.6063 | 1.60960    |
| ULSD     | 1.6566-1.6591 | 1.6581-1.6681 | 1.6155-1.6255 | 1.6419-1.6669 | 1.5625-1.6325 | 1.63867    |

### Chicago Rule 11 (prices in U.S. \$/gal.)

|            | Fri. 03/27    | Mon. 03/30    | Tues. 03/31   | Wed. 04/01    | Thurs. 04/02  | Wkly. Avg. |
|------------|---------------|---------------|---------------|---------------|---------------|------------|
| Current Yr | 1.4700-1.5300 | 1.5100-1.5300 | 1.4900-1.5100 | 1.5300-1.5800 | 1.5300-1.5700 | 1.52500    |

[See page 2 for more spot pricing locations ►](#)

## Ethanol Market Overview:

### Ethanol soars in short week

Once again, the catalyst for the ethanol spot market direction seemed to be the weekly government report that this time revealed a steep draw on inventory, effectively rescuing the market from what appeared to be a midweek rough patch.

Perhaps because it was a short trading week that had some buyers looking for product before a long weekend, or perhaps it was one less day of trading, so it cut short any pre-weekend selling, but momentum in the market remained into the Good Friday break. Some bulk spot prices for ethanol touched the highest level since the start of the year.

In Chicago, ethanol trading for in-tank transfers available this week moved a number of times at \$1.565/gal, which put spot values up 9.25cts week-to-week, or some 6.3%. Railcar deals to the city also had a firm end to the week, with late Rule 11 deals that shipped last week also at \$1.565/gal, up as much as 9.5cts from the week before, and 5.5cts since the week's start.

All those values started to lose steam and slip back at midweek until the U.S. Energy Department issued its weekly supply report that contained a large 770,000-bbl draw on the nation's ethanol supply, a loss of 3.6% that put inventory at a 10-week low of 20.547 million gal. That also came with a sharp 9.5% rebound in gasoline demand that seemed to lend some extra gravitas to the one-week number.

*continued on page 3*

## In Each Issue ...

|                                                  |     |                                        |   |                                                       |    |
|--------------------------------------------------|-----|----------------------------------------|---|-------------------------------------------------------|----|
| Ethanol Market Overview .....                    | 1   | Renewable Fuels Averages.....          | 5 | Biodiesel/Ethanol Plant Profitability .....           | 10 |
| Ethanol and Gasoline Component Spot Prices ..... | 1-2 | Biofuels Stock Performance.....        | 6 | Renewable Fuel Feedstock/Co-Product Price Index ..... | 11 |
| Block Term Contract Prices in Key Markets.....   | 3   | Inside Washington.....                 | 7 | European, Brazilian and CBI Markets .....             | 13 |
| Bulk Truck Spot Prices in Key Markets.....       | 3   | In Key Commodity Markets .....         | 8 | News of the Week .....                                | 15 |
|                                                  |     | Key Supply and Demand Statistics ..... | 8 |                                                       |    |



**Ethanol & Gasoline Component Spot Market Prices** (prices in U.S. \$/gal.)

**Gulf Coast**

|          | Fri. 03/27    | Mon. 03/30    | Tues. 03/31   | Wed. 04/01    | Thurs. 04/02  | Wkly. Avg. |
|----------|---------------|---------------|---------------|---------------|---------------|------------|
| Ethanol  | 1.5850-1.5900 | 1.5800-1.6000 | 1.5550-1.5900 | 1.6100-1.6400 | 1.6550-1.6700 | 1.60750    |
| B100 SME | 2.9400-3.0400 | 2.9400-3.0400 | 2.9300-3.0300 | 2.9700-3.0700 | 2.9000-3.0300 | 2.98900    |
| RBOB Unl | 1.7118-1.7168 | 1.7102-1.7202 | 1.6850-1.6950 | 1.7462-1.7562 | 1.6788-1.6888 | 1.71090    |
| RBOB Pre | 1.8443-1.8493 | 1.8852-1.8952 | 1.8500-1.8600 | 1.9062-1.9162 | 1.8513-1.8613 | 1.87190    |
| CBOB Unl | 1.5668-1.6018 | 1.5702-1.5802 | 1.5400-1.5650 | 1.6187-1.6237 | 1.5438-1.5538 | 1.57640    |
| Unleaded | 1.6068-1.6168 | 1.6202-1.6302 | 1.5850-1.6000 | 1.6537-1.6637 | 1.5788-1.5913 | 1.61465    |
| ULSD     | 1.6650-1.6700 | 1.6687-1.6712 | 1.6254-1.6559 | 1.6769-1.6794 | 1.6080-1.6100 | 1.65305    |
| 61ULSD   | 1.6650-1.6700 | 1.6687-1.6712 | 1.6254-1.6559 | 1.6769-1.6794 | 1.6080-1.6100 | 1.65305    |

**New York**

|             | Fri. 03/27    | Mon. 03/30    | Tues. 03/31   | Wed. 04/01    | Thurs. 04/02  | Wkly. Avg. |
|-------------|---------------|---------------|---------------|---------------|---------------|------------|
| Ethanol     | 1.5700-1.5900 | 1.6000-1.6200 | 1.5800-1.6000 | 1.6400-1.6600 | 1.6400-1.6600 | 1.61600    |
| ITT ETH     | 1.5700-1.5900 | 1.6000-1.6250 | 1.5800-1.6000 | 1.6400-1.6700 | 1.6500-1.6700 | 1.61950    |
| Ethanol Fwd | 1.5800-1.6000 | 1.6100-1.6300 | 1.5850-1.6050 | 1.6400-1.6600 | 1.6350-1.6800 | 1.62250    |
| B100 SME    | 2.9200-3.0200 | 2.9500-3.0500 | 2.9500-3.0800 | 3.0000-3.1200 | 2.9500-3.0800 | 3.01200    |
| RBOB Unl    | 1.5880-1.5980 | 1.6006-1.6106 | 1.5875-1.5975 | 1.8312-1.8412 | 1.7613-1.7713 | 1.67872    |
| RBOB Pre    | 1.8005-1.8105 | 1.8031-1.8131 | 1.7825-1.7925 | 2.0162-2.0262 | 1.9463-1.9563 | 1.87472    |
| CBOB Unl    | 1.6030-1.6130 | 1.6056-1.6156 | 1.5925-1.6025 | 1.7437-1.7537 | 1.6738-1.6838 | 1.64872    |
| CBOB Pre    | 1.8245-1.8345 | 1.8271-1.8371 | 1.8065-1.8165 | 2.0012-2.0112 | 1.9313-1.9413 | 1.88312    |
| Unleaded    | *****         | *****         | *****         | *****         | *****         | *****      |
| ULSD        | 1.7050-1.7150 | 1.7087-1.7187 | 1.6954-1.7054 | 1.7419-1.7519 | 1.6785-1.6885 | 1.71090    |

**Los Angeles**

|            | Fri. 03/27    | Mon. 03/30    | Tues. 03/31   | Wed. 04/01    | Thurs. 04/02  | Wkly. Avg. |
|------------|---------------|---------------|---------------|---------------|---------------|------------|
| Ethanol    | 1.6450-1.6800 | 1.6800-1.7000 | 1.6400-1.6800 | 1.6900-1.7100 | 1.7100-1.7400 | 1.68750    |
| CARBOB - R | 1.9468-1.9968 | 1.9152-1.9352 | 1.9000-1.9250 | 1.9812-1.9962 | 1.8688-1.8863 | 1.93515    |
| CARBOB - P | 2.1968-2.2468 | 2.1652-2.1752 | 2.1350-2.1450 | 2.2087-2.2237 | 2.0963-2.1138 | 2.17065    |
| ULSD       | 1.6466-1.6616 | 1.6631-1.6731 | 1.6530-1.6630 | 1.7044-1.7069 | 1.6375-1.6475 | 1.66567    |

**Nebraska (fob Railcar)**

|         | Fri. 03/27    | Mon. 03/30    | Tues. 03/31   | Wed. 04/01    | Thurs. 04/02  | Wkly. Avg. |
|---------|---------------|---------------|---------------|---------------|---------------|------------|
| Ethanol | 1.4000-1.4200 | 1.4000-1.4300 | 1.3900-1.4300 | 1.4300-1.4800 | 1.4600-1.4900 | 1.43300    |

**Tampa**

|         | Fri. 03/27    | Mon. 03/30    | Tues. 03/31   | Wed. 04/01    | Thurs. 04/02  | Wkly. Avg. |
|---------|---------------|---------------|---------------|---------------|---------------|------------|
| Ethanol | 1.6700-1.7000 | 1.6700-1.7300 | 1.6500-1.7000 | 1.6900-1.7300 | 1.7200-1.7400 | 1.70000    |

**Dallas**

|         | Fri. 03/27    | Mon. 03/30    | Tues. 03/31   | Wed. 04/01    | Thurs. 04/02  | Wkly. Avg. |
|---------|---------------|---------------|---------------|---------------|---------------|------------|
| Ethanol | 1.5600-1.5900 | 1.5700-1.6000 | 1.5400-1.5900 | 1.5800-1.6400 | 1.6100-1.6600 | 1.59400    |

**San Francisco**

|         | Fri. 03/27    | Mon. 03/30    | Tues. 03/31   | Wed. 04/01    | Thurs. 04/02  | Wkly. Avg. |
|---------|---------------|---------------|---------------|---------------|---------------|------------|
| Ethanol | 1.6450-1.6800 | 1.6800-1.7000 | 1.6400-1.6800 | 1.6900-1.7100 | 1.6800-1.7150 | 1.68200    |

**Pacific Northwest**

|         | Fri. 03/27    | Mon. 03/30    | Tues. 03/31   | Wed. 04/01    | Thurs. 04/02  | Wkly. Avg. |
|---------|---------------|---------------|---------------|---------------|---------------|------------|
| Ethanol | 1.6200-1.6400 | 1.6400-1.6500 | 1.6100-1.6300 | 1.6400-1.6800 | 1.6700-1.6900 | 1.64700    |

**Calif. Low Carbon Fuel Standard**

Carbon Credit: \$/MT; Carbon Intensity Pts: \$/Ci; Carbon Credit per Gallon Diesel: \$/gal;  
Carbon Credit per Gallon Gasoline: \$/gal

|             | Fri. 03/27    | Mon. 03/30    | Tues. 03/31   | Wed. 04/01    | Thurs. 04/02  | Wkly. Avg. |
|-------------|---------------|---------------|---------------|---------------|---------------|------------|
| Carb Credit | 21.000-23.000 | 22.000-24.000 | 22.000-24.000 | 21.000-23.000 | 21.000-23.000 | 22.4000    |
| CI Pts      | 0.0017-0.0019 | 0.0018-0.0020 | 0.0018-0.0020 | 0.0017-0.0019 | 0.0017-0.0019 | 0.00184    |
| CC CPG Dsl  | 0.0028-0.0030 | 0.0029-0.0032 | 0.0029-0.0032 | 0.0028-0.0030 | 0.0028-0.0030 | 0.00294    |
| CC CPG Gas  | 0.0031-0.0034 | 0.0032-0.0035 | 0.0032-0.0035 | 0.0031-0.0034 | 0.0031-0.0034 | 0.00328    |

**Methodology and Definitions:**

OPIS derives ethanol, gasoline and biodiesel prices from many means, including surveying buyers and sellers via phone/e-mail, and receiving postings electronically from producers and purchasers. While OPIS makes best efforts to ensure the accuracy and timeliness of its prices, it in no way guarantees either the accuracy or timeliness of any of the data included herein. Definitions are as follows:

**Ethanol Spot Price (Bulk Barge/Rail):** These are large quantity pure ethanol deals transacted or being discussed in certain FOB markets.

**Brazil Ethanol:** Udenatured anhydrous ethanol cargoes, FOB Brazil terminals for export, typically 50,000 bbl or more available 5-30 days from the date of publication. The assessment generally reflects price at the Santos export terminal, though others may be used for assessment purposes.

**Block Term Contract Values:** These are the three-to-six month contract deals between large buyers and sellers of pure ethanol. Some are done as fixed, and those deals are reported in the "Fixed" column. Other deals are done based on a differential to certain gasoline benchmarks (usually conventional spot unleaded). Those formulae are tracked and reported by market each week in the "Formula" column and calculated (based on the closing Thursday price of the gasoline benchmark) to arrive at a "Formula Calculated" price. All deals ("Fixed" and "Formula") are reported from a weighted average survey.

**Bulk Truck Spot Prices (Rack):** These are the prices for truck quantities of pure ethanol at storage points in the given market. These prices are not posted – they are offered to buyers given supply and demand dynamics at prices discovered and published by OPIS.

**Splash Blend Rack Prices:** These are the average of the Thursday closing price that producers and resellers are posting at various rack locations. Typically prices are for small quantities that marketers pull to blend into gasoline to create and deliver ethanol-blended gasoline to accounts.

**Splash Blend Producer Prices:** These are the average of the Thursday closing price that producers (not resellers) are posting at various rack locations. Typically prices are for small quantities that marketers pull to blend into gasoline to create and deliver ethanol-blended gasoline to accounts.

**Low Carbon Fuel Standard Credits:** Traded in U.S. dollars per metric ton of carbon dioxide (CO<sub>2</sub>), this represents the daily traded price range or range of bids and offers on carbon credits generated for compliance under California's Low Carbon Fuel Standard program implemented by the California Air Resources Board. Trading is for credits transferable in the current calendar year, until the last month of the year when deals for the following year may also be considered.



Appendix 3



U.S. Energy Information  
Administration

## Today in Energy

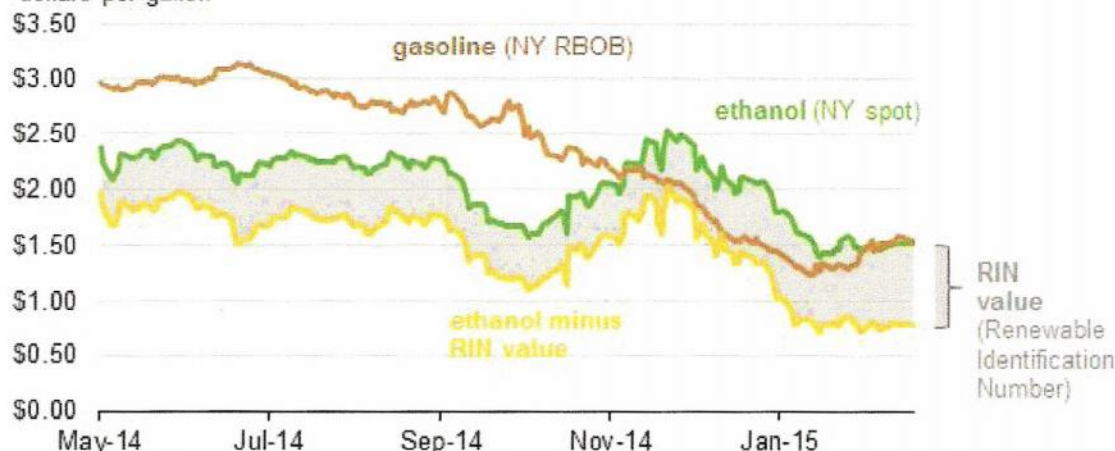
February 23, 2015

### Higher RIN prices support continued ethanol blending despite lower gasoline prices

Daily spot prices of wholesale gasoline, ethanol, and RINs

May 1, 2014 - February 18, 2015

dollars per gallon



**Source:** U.S. Energy Information Administration, based on Oil Price Information Service, Thomson-Reuters

**Note:** RBOB is reformulated blendstock for oxygenate blending.

With the exception of two short periods in late 2013 and the first quarter of 2014, when [winter-related logistical bottlenecks drove up ethanol prices](#), spot ethanol prices have consistently been lower than gasoline prices from December 2011 through October 2014. However, with the sharp decline in crude oil and gasoline prices in the latter months of 2014, gasoline spot prices fell below ethanol spot prices in early November. For most of December through mid-January, ethanol was priced about 30 cents per gallon more than wholesale gasoline; since that time, the gap between the spot prices of ethanol and gasoline has narrowed.

In considering how the relationship between ethanol and gasoline prices affects the incentive to blend ethanol into gasoline, it is important to take account of the value of Renewable Identification Numbers (RINs) associated with each gallon of ethanol that is blended into gasoline. RINs were introduced [as a compliance mechanism for the Renewable Fuel Standard \(RFS\) program](#) administered by the Environmental Protection Agency (EPA) under laws enacted in 2005 and 2007. There are several types of RINs that can be used to demonstrate compliance with goals established for different categories of renewable fuels by the RFS program. In recent years, the D6 RIN, primarily generated via corn ethanol production, has [increased in value](#) during times of higher RFS target announcements or impending compliance deadlines.

The recent increase in the D6 RIN price, shown as the difference between the green and yellow lines in the graph, appears to be driven at least in part by the decline in gasoline prices. When the economics for ethanol blending may seem to be unfavorable based on spot prices, a higher RIN value reduces the "net of RIN" cost of ethanol blending. This affects blenders' RFS compliance choices between the options of purchasing ethanol RINs and blending ethanol, which under the RFS program separates the RINs attached to the blended ethanol gallons, enabling their use for RFS compliance either directly or through sale to another obligated party under the RFS program.

Blending decisions also reflect other factors, notably the need to produce fuels that meet specifications. Ethanol has an octane rating of approximately 113, well above the range of 87 to 93 octane for retail gasoline at the pump. For this reason, ethanol provides an octane boost to blended gasoline, which allows some refiners and blenders to blend ethanol with cheaper sub-octane blendstocks to create finished gasoline, which can bolster blending margins.

Over the past few years, ethanol has sold at prices roughly 10% lower than the price of wholesale gasoline, which combined with positive RIN values and the value of octane encourages refiners and blenders to blend ethanol with gasoline. In most cases, ethanol is blended into gasoline up to 10% by volume. This percentage is the maximum blend approved for use in all gasoline-powered vehicles by EPA and is also accepted by all manufacturers as a fuel that does not risk the voiding of vehicle warranties.

As ethanol prices rose to a \$0.25/gal-to-\$0.30/gal premium over gasoline in December and January, prices for the 2014 D6 ethanol RIN, which can be used for RFS compliance in either 2014 or 2015, increased by roughly the same amount, from about \$0.45/gal in November to \$0.71/gal in mid-January. This increase in the RIN value reduces the effective price of ethanol and supports ethanol blending despite the unfavorable spot ethanol pricing.

Current RIN values may also be affected by uncertainty regarding requirements that EPA might ultimately promulgate for the 2014 and 2015 RFS program years. EPA has yet to promulgate a rule setting the number of RINs that obligated parties will need to cover their RFS obligation for sales made in 2014. EPA has also not proposed, let alone promulgated, rules for the 2015 RFS program year, which by law were to be issued in November, two months prior to the start of the program year. The uncertainty surrounding the finalization of RFS targets for 2014 and 2015, together with the gasoline blending economics discussed above, may also be contributing to recent RIN price developments.

**Principal contributor:** Sean Hill

**Written Testimony of Eric Ebenstein  
Director, State Government Affairs  
POET Biofuel**

Hearing of the Hawaii House Committee on Transportation  
April 7, 2015

**OPPOSING Hawaii Senate Bill 717:  
“RELATING TO ETHANOL”**

The Honorable Henry J.C. Aquino, Committee Chair  
The Honorable Matthew S. LoPresti, Committee Vice-Chair  
And the Members of the Committee on Transportation:

Chairman Aquino, Vice Chairman LoPresti, and Members of the Committee:

POET Biofuel (POET) appreciates this opportunity to provide comments on SB 717, legislation to repeal the requirement that gasoline for motor vehicles sold in the state include ten percent ethanol. This proposal is of significant concern to POET, the companies it does business with throughout the country, and the thousands of farmers and small business owners that work with POET across the United States.

Founded in 1987 with the purchase of a small ethanol plant in Scotland, S.D., POET now employs more than 1,500 people at its companies and plants throughout the country. POET has 27 ethanol production facilities in 7 states.

POET opposes SB 717 because of the impact it would have on greenhouse gas emissions, fuel prices, and economic activity, as well as on research, development and commercialization of advanced and cellulosic biofuels in Hawaii and throughout the country.

Senate Bill 717 needlessly restricts consumer choice; risks exposing Hawaii residents to higher gas prices and increased emissions of greenhouse gases (GHGs) and other pollutants. Furthermore it puts at risk Hawaii’s future job growth in biotechnology.

SB 717 asserts that blending ethanol into gasoline does not produce any economic benefit for the state and that the import of ethanol creates an economic burden for state residents. Respectfully, the reverse is true. A quick review of publically available numbers (some of which was previously submitted as testimony) show the true story.

Available information shows that from January 1, 2013, to the present, wholesale ethanol sold at an average price of 67 cents less gasoline on a per gallon basis. This is an easily recognizable economic benefit to Hawaii’s citizens. Removing the ethanol requirement in gasoline would immediately drive up costs to consumers.

Cleaner air is another benefit Hawaii's citizens gain from the use of ethanol. Using ethanol in place of gasoline helps to reduce carbon dioxide emissions by an average of 34% as compared to gasoline. Cellulosic ethanol can help reduce it even further, up to nearly 100%. In 2013, the 13.3 billion gallons of ethanol produced reduced greenhouse gases by 38 million metric tons. That's the equivalent of taking 8 million cars off the road.

According to a recent study by The Fuels America Coalition, Hawaii is the beneficiary of \$826.8M of total economic output annually. The biofuels sector supports 2,762 jobs, and generates \$184.7M in wages annually, contributing \$30.2M in Federal taxes and \$33M in Hawaii taxes. The economic activity started by the renewable fuel sector creates a ripple effect as supplier firms and employees respond throughout the economy, creating output and jobs in industries and locations that can be far removed from the starting point and beneficial through Hawaii's economy.<sup>1</sup>

Today, over 95 percent of the nation's gasoline supply today is E10. Infrastructure has been firmly established to produce almost all of our nation's fuel supply with ethanol which includes investment by blenders, terminals, and retail marketers in Hawaii and throughout the country. Refiners have optimized their blendstocks to take advantage of ethanol's high octane properties. Removing ethanol would force refiners to make gasoline with components that are both more expensive and have a negative impact on the nation's air quality in Hawaii and throughout the country.

It would be expensive and unnecessary to implement a law that would remove ethanol from our nation's fuel supply. This would create expense, a significant change in fuel infrastructure, and jeopardize consumer choice of cleaner, more affordable fuels at the pump

Introduction of ethanol into the fuel system (from the 10% level currently in HI to higher blends throughout the country) has played an important role in reducing U.S. dependence on foreign sources of petroleum, in reducing transportation fuel costs to the consumer, and in beginning to reduce the carbon intensity of the nation's transportation fuels.

The positive economic effect of ethanol and renewable fuels is felt right here in Hawaii. Ethanol produced in the United States helps Hawaii and other states reduce our dangerous dependence on foreign oil. Reducing dependence on fossil fuel is a major initiative of Hawaii. Passing this bill would be a step in the opposite direction.

Corn ethanol has also laid the groundwork for next generation cellulosic and advanced biofuels being developed in the State of Hawaii and throughout the country.

---

<sup>1</sup> <http://fuelsamerica.guerrillaeconomics.net/>, visited on 3/15/15

Cellulosic and advanced biofuels, which can be produced from forest residues, algae, municipal solid waste, or other renewable sources of biomass, offer some of the most promising solutions to high gas prices, U.S. dependence on foreign petroleum, and job losses in resource-dependent regions of the country.

This legislation would also harm the early-stage development of cellulosic biofuel. Ethanol from the residues of corn and other agricultural crops represents an immediate opportunity to use cellulosic technology. POET's Project Liberty, the country's first commercial cellulosic biorefinery uses corn residue as its feedstock. This \$250 million dollar project, in Emmetsburg, Iowa, began commercial operations last July. DuPont, who is also planning to testify against this legislation, has a cellulosic facility under construction as well. Hawaii, with its abundant biomass, has the opportunity for economic enrichment as this field matures.

POET respectfully urges the Committee to oppose SB 717. This government regulation on a renewable fuel as a gasoline blend would raise state energy prices, hurt competition and the environment, and negatively impact Hawaii's state biotech industry and infrastructure by undermining the continued research and development of cellulosic biofuel in Hawaii.





Board of Directors

Richard Rowland  
*Chairman and Founder*

Keli'i Akina, Ph.D.  
*President/CEO*

Eddie Kemp  
*Treasurer*

Gilbert Collins

Robin Tijoe

April 8, 2015  
11:00 AM  
Conference Room 309

To: House Committee on Transportation  
Rep. Henry Aquino, Chair  
Rep. Matthew LoPresti, Vice Chair

From: Grassroot Institute of Hawaii  
President Keli'i Akina, Ph.D.

RE: SB 717 -- RELATING TO ETHANOL  
*Comments Only*

Dear Chair and Committee Members:

The Grassroot Institute of Hawaii would like to offer its comments on SB 717, which would repeal the requirement that gasoline sold in the state for use in motor vehicles be composed of 10% ethanol.

The ethanol requirement is a classic example of a law that raises the cost of living and doing business in the state without any corresponding benefit to our economy. It has the effect of raising fuel costs, as a gallon of ethanol is more expensive than a gallon of gasoline (an average of \$2.40 versus \$1.73 per gallon as of December 2015),<sup>1</sup> but is not as efficient. According to the Department of Energy, vehicles typically get 3-5% fewer miles per gallon on fuel that consists of an ethanol blend as opposed to 100% gasoline.<sup>2</sup> The Manhattan Institute for Policy Research estimates that since 2007, the federal ethanol requirements have cost Americans, "more than \$10 billion per year in extra fuel costs above what they would have paid if they had purchased gasoline alone."<sup>3</sup>

Moreover, recent research has cast serious doubt on the claim that ethanol is better for the environment. California regulators examining the total environmental cost of ethanol estimate

---

<sup>1</sup> Bryce, Robert. "End the Ethanol Rip-off," *New York Times*. March 10, 2015. Available at [http://www.nytimes.com/2015/03/10/opinion/end-the-ethanol-rip-off.html?\\_r=0](http://www.nytimes.com/2015/03/10/opinion/end-the-ethanol-rip-off.html?_r=0).

<sup>2</sup> See <http://www.fueleconomy.gov/feg/ethanol.shtml>.

<sup>3</sup> Bryce, Robert. *The Hidden Corn Ethanol Tax: How Much Does the Renewable Fuel Standard Cost Motorists?*. Manhattan Institute Issue Brief No. 32, March 2015. Available at <http://www.robertbryce.com/articles/606-the-hidden-corn-ethanol-tax-how-much-does-the-renewable-fuel-standard-cost-motorists>.



that corn may actually be worse for the environment than petroleum when one takes into account the total amount of greenhouse gas emissions produced as well as deforestation and environmental disruption arising from increases in corn prices and production.<sup>4</sup>

In short, the current ethanol requirement costs Hawaii consumers at the pump, reduces fuel efficiency, and has no proven environmental benefit. It does not help Hawaii agriculture or industry, but rather imposes a hidden tax in the form of higher fuel prices. In light of these facts, the proposed bill appears to be a common sense effort to lower fuel prices and the cost of living in the state.

Thank you for the opportunity to submit our comments.

Sincerely,  
Keli'i Akina, Ph.D.  
President, Grassroot Institute of Hawaii

---

<sup>4</sup> Cimitile, Matthew. "Corn Ethanol Will Not Cut Greenhouse Gas Emissions." *Scientific American*. April 10, 2009. Available at <http://www.scientificamerican.com/article/ethanol-not-cut-emissions/>

Hello ,

My name is Terry McBarnet and I would like to respond to the testimony opposing SB 717 "Ending the Ethanol Mandate in Hawaii" they claim that ethanol saves the Hawaii consumer money on their transportation cost. This is misleading information, because they neglect to compare the energy variance between ethanol and gasoline.

I believe what is important to the Hawaii consumer is getting the maximum miles per gallon at the lowest cost.

According to Wikipedia<sup>1</sup>, which I view as an unbiased opinion on this issue, it states that Ethanol Fuel "contains 34% less energy per unit volume than gasoline. "

Another website eHow<sup>2</sup>, which I also view as an unbiased opinion noted under "How does Ethanol Performance Compared to Gasoline—Mileage & Fuel Economy," shared a real world example where they did a 150 mile evaluation comparing Ethanol Fuel (E85) to E-Free Gasoline using a 2007 Tahoe. Their evaluation noted the 2007 Tahoe averaged 13 mpg using Ethanol Fuel in comparison to E-Free Gasoline averaging 18 mpg." This equates to approximately 28% mileage improvement between the two types of fuel.

Therefore, this study concludes that the Gasoline Gallon Equivalents (GGE) of a gallon of Ethanol Fuel (E-85) equates to 1.28 gallons of ethanol. In other words, when the Hawaii consumer realizes that to get the same mileage from one gallon of E-Free gasoline it will require approximately 1.28 gallons of ethanol fuel it will be clear that ending the Ethanol Mandate is in their economic interest.

To confirm the above cost savings, enclosed is a comparison chart (please reference next page) that is adjusted for these facts noted above and the numbers reflect the past ten year annual average of the cost between Ethanol Fuel and E-Free Gasoline. I use the Average Annual Rack Price FOB Omaha<sup>3</sup>, Nebraska per gallon of ethanol and Unleaded Gasoline (*Nebraska is the second largest ethanol producer in the U.S.*), which reflects competitive ethanol prices and used the GGE for ethanol of 1.28%.

Note that the cost of ethanol fuel is a significantly more expensive source of energy than E-Free gasoline

---

<sup>1</sup> [http://en.wikipedia.org/wiki/Ethanol\\_fuel#Fuel\\_economy](http://en.wikipedia.org/wiki/Ethanol_fuel#Fuel_economy)

<sup>2</sup> [http://www.ehow.com/how-does\\_4676594\\_ethanol-performance-compare-gasoline.html](http://www.ehow.com/how-does_4676594_ethanol-performance-compare-gasoline.html)

<sup>3</sup> <http://www.neo.ne.gov/statshtml/66.html>

| YEAR                                                     | <A><br>AVERAGE<br>ETHANOL<br>COST PER<br>GALLON | <B><br>GASOLINE<br>GALLON<br>EQUIVALENT<br>MULTIPLIER | <A*B = C><br>COST OF<br>ETHANOL<br>MILEAGE/ENERGY<br>EQUIVALENT | <D><br>AVERAGE<br>GASOLINE<br>COST PER<br>GALLON | <C*D = E><br>ETHANOL<br>MORE<br>EXPENSIVE<br>BY ... |
|----------------------------------------------------------|-------------------------------------------------|-------------------------------------------------------|-----------------------------------------------------------------|--------------------------------------------------|-----------------------------------------------------|
| 2014                                                     | \$ 2.34                                         | 1.28                                                  | \$ 3.00                                                         | \$ 2.66                                          | \$ 0.34                                             |
| 2013                                                     | \$ 2.47                                         | 1.28                                                  | \$ 3.16                                                         | \$ 2.90                                          | \$ 0.26                                             |
| 2012                                                     | \$ 2.37                                         | 1.28                                                  | \$ 3.03                                                         | \$ 2.95                                          | \$ 0.08                                             |
| 2011                                                     | \$ 2.70                                         | 1.28                                                  | \$ 3.46                                                         | \$ 2.90                                          | \$ 0.56                                             |
| 2010                                                     | \$ 1.93                                         | 1.28                                                  | \$ 2.47                                                         | \$ 2.17                                          | \$ 0.30                                             |
| 2009                                                     | \$ 1.79                                         | 1.28                                                  | \$ 2.29                                                         | \$ 1.76                                          | \$ 0.53                                             |
| 2008                                                     | \$ 2.47                                         | 1.28                                                  | \$ 3.16                                                         | \$ 2.57                                          | \$ 0.59                                             |
| 2007                                                     | \$ 2.24                                         | 1.28                                                  | \$ 2.87                                                         | \$ 2.23                                          | \$ 0.64                                             |
| 2006                                                     | \$ 2.58                                         | 1.28                                                  | \$ 3.30                                                         | \$ 1.94                                          | \$ 1.36                                             |
| 2005                                                     | \$ 1.80                                         | 1.28                                                  | \$ 2.30                                                         | \$ 1.66                                          | \$ 0.64                                             |
| Note:<br><B> Gasoline Gallon Equivalent (GGE) Multiplier |                                                 |                                                       |                                                                 |                                                  |                                                     |

Given the above analysis the facts are clear that the Hawaii consumer's cost of transportation is currently higher than it would be if the Ethanol mandate was removed.

I'm always available to clarify any questions or concerns at your convenience. Please feel free to call me at 808-281-0168.

Aloha,

Terry McBarnet

lopresti2 - George

---

From: mailinglist@capitol.hawaii.gov  
Sent: Sunday, April 05, 2015 10:29 PM  
To: TRNtestimony  
Cc: alohashellservice@hawaii.rr.com  
Subject: Submitted testimony for SB717 on Apr 8, 2015 09:30AM

**SB717**

Submitted on: 4/5/2015

Testimony for TRN on Apr 8, 2015 09:30AM in Conference Room 309

| Submitted By | Organization        | Testifier Position | Present at Hearing |
|--------------|---------------------|--------------------|--------------------|
| Paul Hanada  | Aloha Shell Service | Support            | No                 |

Comments: Please support this bill. Consumers will benefit by not having to pay for ethanol related repairs and will get better gas mileage with non ethanol gasoline. We will not have to pay for ethanol related repairs to dispensing and storage equipment. Hawaii will not have to import ethanol from other countries. Thank you

Please note that testimony submitted less than 24 hours prior to the hearing, improperly identified, or directed to the incorrect office, may not be posted online or distributed to the committee prior to the convening of the public hearing.

Do not reply to this email. This inbox is not monitored. For assistance please email [webmaster@capitol.hawaii.gov](mailto:webmaster@capitol.hawaii.gov)

lopresti2 - George

---

From: mailinglist@capitol.hawaii.gov  
Sent: Friday, April 03, 2015 4:03 PM  
To: TRNtestimony  
Cc: mz9995@hotmail.com  
Subject: Submitted testimony for SB717 on Apr 8, 2015 09:30AM

**SB717**

Submitted on: 4/3/2015

Testimony for TRN on Apr 8, 2015 09:30AM in Conference Room 309

| Submitted By   | Organization | Testifier Position | Present at Hearing |
|----------------|--------------|--------------------|--------------------|
| Michael Zehner | Individual   | Support            | No                 |

Comments: I want to pay less at the pump - plain and simple. I support this bill.

Please note that testimony submitted less than 24 hours prior to the hearing, improperly identified, or directed to the incorrect office, may not be posted online or distributed to the committee prior to the convening of the public hearing.

Do not reply to this email. This inbox is not monitored. For assistance please email [webmaster@capitol.hawaii.gov](mailto:webmaster@capitol.hawaii.gov)

lopresti2 - George

---

From: mailinglist@capitol.hawaii.gov  
Sent: Friday, April 03, 2015 1:12 PM  
To: TRNtestimony  
Cc: antonchris10@gmail.com  
Subject: Submitted testimony for SB717 on Apr 8, 2015 09:30AM

**SB717**

Submitted on: 4/3/2015

Testimony for TRN on Apr 8, 2015 09:30AM in Conference Room 309

| Submitted By | Organization | Testifier Position | Present at Hearing |
|--------------|--------------|--------------------|--------------------|
| Chris Anton  | Individual   | Support            | No                 |

Comments: Anything to lower gas prices I support.

Please note that testimony submitted less than 24 hours prior to the hearing, improperly identified, or directed to the incorrect office, may not be posted online or distributed to the committee prior to the convening of the public hearing.

Do not reply to this email. This inbox is not monitored. For assistance please email [webmaster@capitol.hawaii.gov](mailto:webmaster@capitol.hawaii.gov)

From: mailinglist@capitol.hawaii.gov  
Sent: Monday, April 06, 2015 1:36 PM  
To: TRNtestimony  
Cc: alec@mauioil.com  
Subject: Submitted testimony for SB717 on Apr 8, 2015 11:00AM

**SB717**

Submitted on: 4/6/2015

Testimony for TRN on Apr 8, 2015 11:00AM in Conference Room 309

| Submitted By  | Organization | Testifier Position | Present at Hearing |
|---------------|--------------|--------------------|--------------------|
| alec mcbarnet | Individual   | Support            | No                 |

Comments: i strongly feel Hawaii consumers are better served without Ethanol being required in their gas. The hope that Hawaii would grow our own base stock for home grown and home produced Ethanol drove many of us to support the original requirement. Today that will never happen- and the economics ( miles per gallon for E-10 less than Non Ethanol) ,impact of food to energy on cost of goods, and still having environmental concerns and still having to import 100% of the ethanol we use in Hawaii, all speak to the need to drop the mandatory use of ethanol in Hawaii. I urge all to support SB 717 removing the mandatory requirements of ethanol in Hawaii gas..We supported this in good faith , however time has proven this not in the consumers best interest in Hawaii thank you

Please note that testimony submitted less than 24 hours prior to the hearing, improperly identified, or directed to the incorrect office, may not be posted online or distributed to the committee prior to the convening of the public hearing.

Do not reply to this email. This inbox is not monitored. For assistance please email [webmaster@capitol.hawaii.gov](mailto:webmaster@capitol.hawaii.gov)

lopresti2 - George

---

From: mailinglist@capitol.hawaii.gov  
Sent: Monday, April 06, 2015 8:59 PM  
To: TRNtestimony  
Cc: anthuriumz@hotmail.com  
Subject: \*Submitted testimony for SB717 on Apr 8, 2015 11:00AM\*

**SB717**

Submitted on: 4/6/2015

Testimony for TRN on Apr 8, 2015 11:00AM in Conference Room 309

| Submitted By | Organization | Testifier Position | Present at Hearing |
|--------------|--------------|--------------------|--------------------|
| wynnie hee   | Individual   | Support            | No                 |

Comments:

Please note that testimony submitted less than 24 hours prior to the hearing, improperly identified, or directed to the incorrect office, may not be posted online or distributed to the committee prior to the convening of the public hearing.

Do not reply to this email. This inbox is not monitored. For assistance please email [webmaster@capitol.hawaii.gov](mailto:webmaster@capitol.hawaii.gov)



From: mailinglist@capitol.hawaii.gov  
Sent: Tuesday, April 07, 2015 4:49 PM  
To: TRNtestimony  
Cc: lho@hawaiipublicpolicy.com  
Subject: Submitted testimony for SB717 on Apr 8, 2015 11:00AM

**SB717**

Submitted on: 4/7/2015

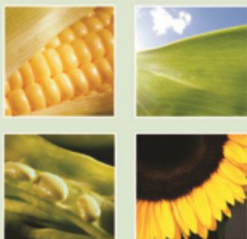
Testimony for TRN on Apr 8, 2015 11:00AM in Conference Room 309

| Submitted By | Organization | Testifier Position | Present at Hearing |
|--------------|--------------|--------------------|--------------------|
| Chevron      | Chevron      | Support            | Yes                |

Comments: We are writing in support of SB 717 and respectfully request that the implementation date be set at December 31, 2015. The law requiring a 10% blend ethanol blend for motor gasoline was adopted into statute to promote the agriculture industry in the 1990s. Subsequently, the administrative rules requiring 85% of all motor gasoline distributed in Hawaii contain 10% ethanol (E10) were adopted by DBEDT in 2004. Allowing for an 18 month transition period, E10 started in April 2006. We respectfully request an implementation date of December 31, 2015 if this measure moves forward to allow the industry to adequately address potential logistical or infrastructure changes that may be necessary to reintegrate fuel without ethanol into the marketplace.

Please note that testimony submitted less than 24 hours prior to the hearing, improperly identified, or directed to the incorrect office, may not be posted online or distributed to the committee prior to the convening of the public hearing.

Do not reply to this email. This inbox is not monitored. For assistance please email [webmaster@capitol.hawaii.gov](mailto:webmaster@capitol.hawaii.gov)



# Hawaii Crop Improvement Association

*Growing the Future of Worldwide Agriculture in Hawaii*

## HOUSE COMMITTEE ON TRANSPORTATION

### Testimony on Senate Bill 717

### Repeals requirement for 10% Ethanol

April 8, 2015. Room 309. 11 am

#### HCIA 2014-2016 Board of Directors

##### President

Kirby Kester

##### Vice President

Alan Takemoto

##### Secretary

Dawn Bicoy

##### Treasurer

Keith Horton

##### Directors At Large

Blaise Boyle

Cindy Goldstein

Adolph Helm

Steve Lupkes

Grant Manning

Shay Sunderland

Mark Stoutemyer

##### Immediate Past President

Mark Phillipson

##### Executive Director

Bennette Misalucha

Aloha Chair Aquino, Vice Chair Lopesti and Members of the Committee,

My name is Bennette Misalucha, Executive Director of the Hawaii Crop Improvement Association. HCIA is a Hawaii-based non-profit organization that promotes ag bio tech to help farmers and communities succeed. Through education, collaboration and advocacy, we work to ensure a safe and sustainable food supply, support responsible farming practices and build a healthy state economy.

HCIA respectfully opposes SB 717.

The benefits of using ethanol as an alternative source of fuel have already been well established. It is with this in mind that the Hawaii legislature established a law five years ago which would require all gasoline in the state used for motor vehicles be composed of 10 percent ethanol.

We understand that now there appears to have been a change of heart, particularly because, despite the fact that several biomass, biofuel, or ethanol facilities have been proposed, none was established, and as such, Hawaii does not derive economic benefits from the current law.

We contend that in matters of environmental issues, The State ought to take a long term view. Although, the economic benefits may not be easily quantified at the moment, there are social and environmental benefits that should rationalize maintaining this law.

Repealing this requirement sends a wrong message about the State's commitment to move away from its dependence on fossil fuels.

We understand there continues to be business interests in establishing ethanol facilities in the State; however, if a repeal is enacted, then the likelihood of any future investment into ethanol production becomes even more remote. The State needs to provide a good environment which would attract future investors, and create the groundswell towards the use of alternative sources of energy.

We urge the members of the House Transportation Committee to reject SB 717.

Thank you for the opportunity to submit testimony.

P.O. Box 126

Aiea, HI 96701

Tel: (808) 594-3611

director@hciaonline.com

admin@hciaonline.com

[www.hciaonline.com](http://www.hciaonline.com)



LATE

**TO:** HOUSE COMMITTEE ON TRANSPORTATION  
Representative Henry J.C. Aquino, Chair  
Representative Matthew S. LoPresti, Vice Chair

**FROM:** Richard Parry  
President and Chief Executive Officer of Aloha Petroleum, Ltd.

**HEARING**  
**DATE:** Wednesday, April 8, 2015  
**TIME:** 11:00 a.m.  
**PLACE:** State Capitol, Conference Room 309

**RE: Testimony on S.B. No. 717 SD2 Relating to Ethanol**

Chair Aquino, Vice Chair LoPresti, and Members of the House Committee on Transportation, I am Richard Parry, President and Chief Executive Officer of Aloha Petroleum, Ltd. ("Aloha Petroleum").

Aloha Petroleum would like to comment on SB No. 717 SD2 which seeks to repeal the existing requirement that most gasoline sold in the state for use in motor vehicles be composed of ten per cent ethanol. Normally, we do not support government mandates, however, we would like to point out the possible unintended consequences of repealing this state mandate.

Even if the state ethanol mandate is repealed, local refiners must still comply with federal requirements under the "Renewable Fuel Standard". Our concern is that repeal of the state mandate, but not the federal mandate, could lead to the two Hawaii refiners manufacturing different types of gasoline – conventional (not for ethanol blending) and HIBOB/E10 (gasoline feedstock for ethanol blending). This would cause a serious problem for gasoline distribution in Hawaii as the two products would need to be segregated in fuel terminals, retail stations, trucks and barges. Such segregation would increase the probability of product run-outs, especially on the neighbor islands, and would lead to increased distribution costs due to the sub-optimization of distribution facilities.

Thank you for the opportunity to testify on SB No. 717 SD2.